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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Wed Sep 19 10:13:00 EDT 2007

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Application No: 09674546 Version No: 4.0

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399
Finished: 2007-09-19 09:58:50.669
Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms
Total Warnings: 40
Total Errors: 216
No. of SeqIDs Defined: 3287
Actual SeqID Count: 3287

Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (16)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (44)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (50)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (86)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (144)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (148)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (188)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (194)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (198)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (204)

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399
Finished: 2007-09-19 09:58:50.669
Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms
Total Warnings: 40
Total Errors: 216
No. of SeqIDs Defined: 3287
Actual SeqID Count: 3287

Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (206)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (216)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (258)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (312)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (356)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (372)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (412)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (460)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (492)
E 355	Empty lines found between the amino acid numbering and the proteins
E 321	No. of Bases conflict, this line has no nucleotides SEQID (494) POS (96)
W 213	Artificial or Unknown found in <213> in SEQ ID (3022)

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399

Finished: 2007-09-19 09:58:50.669

Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms

Total Warnings: 40

Total Errors: 216

No. of SeqIDs Defined: 3287

Actual SeqID Count: 3287

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (3023)
W 213	Artificial or Unknown found in <213> in SEQ ID (3024)
W 213	Artificial or Unknown found in <213> in SEQ ID (3025)
W 213	Artificial or Unknown found in <213> in SEQ ID (3026)
W 213	Artificial or Unknown found in <213> in SEQ ID (3027)
W 213	Artificial or Unknown found in <213> in SEQ ID (3028)
W 213	Artificial or Unknown found in <213> in SEQ ID (3029)
W 213	Artificial or Unknown found in <213> in SEQ ID (3030)
W 213	Artificial or Unknown found in <213> in SEQ ID (3031)
W 213	Artificial or Unknown found in <213> in SEQ ID (3032)
W 213	Artificial or Unknown found in <213> in SEQ ID (3033)
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W 213	Artificial or Unknown found in <213> in SEQ ID (3036)
W 213	Artificial or Unknown found in <213> in SEQ ID (3037)
W 213	Artificial or Unknown found in <213> in SEQ ID (3038)
W 213	Artificial or Unknown found in <213> in SEQ ID (3039)
W 213	Artificial or Unknown found in <213> in SEQ ID (3266)
W 213	Artificial or Unknown found in <213> in SEQ ID (3267)

This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> FRASER, Claire
 GALEOTTI, Cesira
 GRANDI, Guido
 HICKEY, Erin
 MASIGNANI, Vega
 MORA, Marirosa
 PETERSEN, Jeremy
 PIZZA, Mariagrazia
 RAPPUOLI, Rino
 RATTI, Giulio
 SCARLATO, Vincenzo
 SCARSELLI, Maria
 TETTELIN, Herve
 VENTER, Craig J.

<120> Neisseria Meningitidis Antigens and Compositions

<130> 223002101200

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 <141> 2002-11-04

<150> PCT/US99/09346
 <151> 1999-04-30

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 <151> 1999-02-25

<160> 3287

<170> PatentIn version 3.2

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tcgggtacgc atactttacc ggtttgggcg attttgccga ggtcgttgcg cagcaaatacg 180

acaatcatca cgttttcggc gcggtttttc gggtcggttt gtaactcggc ggcgcggcgt 240

tcgtcttgtc cgtcgcccaa aatcggcgcg gtgcctttca tcggttcggt gctgatggtg 300

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ccggcttcat cgggcaggtg ggacaatacg gcatag 396

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<213> *Neisseria gonorrhoeae*

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Met Leu Pro Gln Gly Lys Ala Ala Arg Arg Val Ser Ala Asn Glu Val
1 5 10 15

Ser Gly Arg Ala Cys Ala Arg Met Val Leu Val Ile Cys Gln Thr Leu
20 25 30

Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Leu Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Val Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Ala Met Leu Arg Lys Ser Ser Gly Glu
100 105 110

Lys His Ser Val His Ala Asp Cys Pro Ala Ser Ser Gly Arg Trp Asp
115 120 125

Asn Thr Ala

130

<210> 3

<211> 395

<212> DNA

<213> Neisseria meningitidis

<400> 3

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cgggtacgca tactgtgccg gtttgggcga ttttgccgag atcgttacgc agcaaatacga 180

caatcatcac gttttcggcg cggtttttcg ggtctgcttg caactcggcg gcgcggcggtt 240

cgtcttgtcc gtcgccc aaa atcggcgcgg tgcctttcat cggttcggtg ctgatggtgc 300

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<211> 131

<212> PRT

<213> Neisseria meningitidis

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<220>

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<222> (24)..(24)

<223> Xaa can be any naturally occurring amino acid

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1 5 10 15

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20 25 30

Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Val Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Ala Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Pro Ile Leu Arg Lys Ser Ser Gly Glu
100 105 110

Lys His Ser Val His Ala Asp Cys Pro Ser Ala Ser Gly Arg Trp Asp
115 120 125

Lys Thr Ala
130

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<211> 396
<212> DNA
<213> Neisseria meningitidis

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tcgggtacgc atactgtgcc ggtttgggcg attttgccga ggtcgttacg cagcaaatacg 180
acaatcatca cgttttcggc gcggtttttc ggggtctgctt gcaactcggc ggcgcggcgt 240
tcgtcttgtc cgtcgcccaa aatcggcgcg gtgcctttca tcggttcggt gctgatggtg 300
ccgtccgaac cgattttgag gaagagttcg ggcgagaaac acagcgcca cgcggttcgc 360
ccttgtgcat cgggcaggtg ggacaaaacg gcatag 396

<210> 6
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<212> PRT
<213> Neisseria meningitidis

<400> 6

Met Leu Pro Gln Gly Lys Ala Ala Arg Arg Met Ser Ala Asn Glu Val
1 5 10 15

Cys Gly Lys Ala Trp Ala Trp Met Val Leu Val Ile Cys Gln Thr Leu
20 25 30

Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Val Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Ala Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Pro Ile Leu Arg Lys Ser Ser Gly Glu
100 105 110

Lys His Ser Val His Ala Asp Cys Pro Cys Ala Ser Gly Arg Trp Asp
115 120 125

Lys Thr Ala
130

<210> 7
<211> 663
<212> DNA
<213> Neisseria gonorrhoeae

<220>
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<222> (529)..(529)
<223> n is a, c, g, or t

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ctcttcgggtc aggggtgcgtt tgagttcggc gtcaactcggg tttttatacg ttgccgcgtc 120
gaagcctttg ccttgccggtg cggtctttggt tttgcccggc agcgggttcgt cggcctttgcg 180
gatgtcgaag tggcagtagc cggtgggggt tttaatcagg tagtcctgat ggtattcctc 240
ggcgtcgtag aagtttttca gcgggttcgtt ttcaacaacg aggggcagtt ggtatttttg 300

ctgctcgcggt ttgagggcggt cggcgatgac ggcttttttcg gcgggggtcgg tgtagtacac 360
 gccgctgcggg tattgctgtgc cgggtgtcggt accctgtttg ttgaggctgg tcggatcaac 420
 gacgcggaaa taatattgca ggatgtcgtc caggctgagt ttgtcggcat cgtaggtcac 480
 tttgacggtc tcggcatgac ccgtatggcg gtaggacact tcttcgtanc tcgggttttc 540
 cgtgttgccg ttggcggttac cggataccgc gtcaaccacg ccgtcgatgc gttggaaata 600
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<210> 8
 <211> 219
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 8

Met Val Val Phe Val Ala Glu Gly Val Phe Gly Arg Ala Val Leu Gly
 1 5 10 15

His Leu Val Leu Leu Phe Gly Gln Gly Ala Phe Glu Phe Gly Val Thr
 20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Cys Gly
 35 40 45

Phe Gly Phe Ala Arg Gln Arg Phe Val Gly Phe Ala Asp Val Asp Val
 50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
 65 70 75 80

Gly Val Val Glu Val Phe Gln Arg Phe Val Phe Asn Asn Glu Gly Gln
 85 90 95

Leu Val Phe Leu Leu Leu Ala Phe Glu Gly Gly Gly Asp Asp Gly Phe
 100 105 110

Phe Gly Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Ala Gly
 115 120 125

Val Val Thr Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Ile
 130 135 140

Ile Leu Gln Asp Val Val Gln Ala Glu Phe Val Gly Ile Val Gly His
 145 150 155 160

Phe Asp Gly Leu Gly Met Thr Arg Met Ala Val Gly His Phe Phe Val
 165 170 175

Arg Val Phe Arg Val Ala Val Gly Val Thr Gly Tyr Arg Val Asn His
 180 185 190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Lys Ala Ala Ala
 195 200 205

Gly Glu Val Asn Gly Ala Arg Val His Asp Cys
 210 215

<210> 9
 <211> 662
 <212> DNA
 <213> Neisseria meningitidis

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 gaagcctttg ccttgccgggg cggtcttgggt tttgcccggc agcggttcgt cagckttgcg 180
 gatgtcgatg tggcagtagc cggttgggggt tttaatcaag tagtcctgat ggtattcctc 240
 ggcatcgtag aagtttttca gcggctcggt ttcaacaacg aggggcagtt ggtatttttg 300
 ctgctcgcgt ttgagggcgk cggcgatgac ggctttttcg kcggggtcgg tgtagtacac 360
 gccgctgcgg tattgcgtac cggtgtcggt gccctgtttg ttgaggctgg tcggatcaac 420
 gacgcggaag aaatattgca ggatgtcgtc taggctgagt ttgtcggcat cgtaggtcac 480
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 cgtgttgccg ttggcgtagc cgataccgc gtcaaccacg ccgtcgatgc gttggaaata 600
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<210> 10
 <211> 219
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 <213> Neisseria meningitidis

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<222> (19)..(19)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (59)..(59)
<223> Xaa can be any naturally occurring amino acid

<220>
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1 5 10 15

Asn Leu Xaa Leu Leu Phe Gly Gln Gly Ala Phe Glu Phe Gly Val Thr
20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Gly Gly
35 40 45

Leu Gly Phe Ala Arg Gln Arg Phe Val Ser Xaa Ala Asp Val Asp Val
50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
65 70 75 80

Gly Ile Val Glu Val Phe Gln Arg Leu Val Phe Asn Asn Glu Gly Gln
85 90 95

Leu Val Phe Leu Leu Leu Ala Phe Glu Gly Xaa Gly Asp Asp Gly Phe
100 105 110

Phe Xaa Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Thr Gly
115 120 125

Val Val Ala Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Glu
130 135 140

Ile Leu Gln Asp Val Val Ala Glu Phe Val Gly Ile Val Gly His Phe
145 150 155 160

Asp Gly Phe Gly Val Ala Arg Met Ala Val Gly His Val Phe Ile Ala
165 170 175

Arg Ile Phe Arg Val Ala Val Gly Val Ala Gly Tyr Arg Val Asn His
180 185 190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Glu Ala Ala Xaa
195 200 205

Gly Glu Val Asn Gly Ala Arg Val His Asp Phe
210 215

<210> 11
<211> 663
<212> DNA
<213> Neisseria meningitidis

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gaagcctttg ccttgccgtg cggctcttggg tttgcccggc agcgggttcgt cggcttttgcg 180
gatatcgatg tggcagtagc cggtgggggtt tttaatcaag tagtcctgat ggtattcctc 240
ggcatcgtag aagtttttca gcggctcgtt ttcaacaacg aggggcagtt ggtatttttg 300
ctgctcgcgt ttgagggcgg cggcgatgac ggctttttcg gcggggtcgg tgtagtacac 360
gccgctgcgg tattgcgtac cgggtgctgtt gccctgtttg ttgaggctgg tcggatcaac 420
gacgcggaag aaatattgca ggatgtcgtc taggctgagt ttgtcggcat cgtaggtcac 480
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cgtgtttgccg ttggcgtagc cggataccgc gtcaaccacg ccgtcgtatgc gttggaaata 600
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tga 663

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<211> 219
<212> PRT
<213> *Neisseria meningitidis*

<400> 12

Met Val Val Phe Val Ala Glu Gly Ile Phe Gly Arg Ala Val Leu Gly
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20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Cys Gly
35 40 45

Leu Gly Phe Ala Arg Gln Arg Phe Val Gly Phe Ala Asp Ile Asp Val
50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
65 70 75 80

Gly Ile Val Glu Val Phe Gln Arg Leu Val Phe Asn Asn Glu Gly Gln
85 90 95

Leu Val Phe Leu Leu Leu Ala Phe Glu Gly Gly Gly Asp Asp Gly Phe
100 105 110

Phe Gly Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Thr Gly
115 120 125

Val Val Ala Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Glu
130 135 140

Ile Leu Gln Asp Val Val Ala Glu Phe Val Gly Ile Val Gly His Phe
145 150 155 160

Asp Gly Phe Gly Val Ala Arg Met Ala Val Gly His Val Phe Ile Ala
165 170 175

Arg Ile Phe Arg Val Ala Val Gly Val Ala Gly Tyr Arg Val Asn His
180 185 190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Glu Ala Ala Ala
195 200 205

Gly Glu Val Asp Gly Ala Arg Val His Asp Phe
210 215

<210> 13
<211> 777
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<213> Neisseria gonorrhoeae

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aattcttctc cgaacacggc tttcgctcgc tctgaaacaa cggggtcggg aatgcgcgcg 720
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<211> 258
<212> PRT
<213> Neisseria gonorrhoeae

<400> 14

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20 25 30

Asp Phe Arg Ala Asp Lys Ala Ala Gly Gly Phe Phe Gly Ile Gln Ala

35

40

45

His Met Ala Phe Val Tyr Gln His His Ala Ala Ala Thr Leu Ile Phe
50 55 60

Glu Arg Tyr Phe Ala Asp Asp Lys Phe Val Gly Leu Val Leu Arg Gly
65 70 75 80

Asn Leu Arg Val Phe Gln Thr Asp Lys Ala Asp Leu Arg Thr Gly Lys
85 90 95

His His Ala Asn Gly Ala Ala Ala Gln Thr Ala Ala Asp Ile Arg Val
100 105 110

Ala Ala Pro Arg Tyr Cys Pro Ala Ile Leu Pro Trp Ser Ala Ala Ser
115 120 125

Cys Ser Arg Gly Ser Tr